

## CLAIMS

What is claimed is:

1           1.       A chemical additive dispensing device for use with a station of an irrigation  
2 system comprising:

3               a fluid diversion housing having an input port for receipt of a first section of an outlet  
4 pipe extending from the station of the irrigation system and an output port for receipt of a  
5 second section of the outlet pipe that provides fluid to the rest of the irrigation system, the  
6 input port and the outlet port being in fluid communication such that the first and second  
7 sections of the outlet pipe are in fluid communication with one another;

8               a container coupled to the fluid diversion housing, the container to store a chemical  
9 additive;

10              an in-flow channel formed within the fluid diversion housing in fluid communication  
11 with the input port and the container for diverting fluid from the input port into the container;  
12 and

13              an out-flow channel formed within the fluid diversion housing in fluid communication  
14 with the output port and the container for diverting fluid from the container into the output  
15 port;

16              wherein, in operation, the container is filled with fluid from the in-flow channel such  
17 that the fluid mixes with the chemical additive, and once the container is filled with fluid, the  
18 mixture of fluid and chemical additive is diverted through the out-flow channel to the output  
19 port such that the fluid chemical additive mixture is distributed to the rest of the irrigation  
20 system.

1           2.       The chemical additive dispensing device of claim 1, wherein the fluid  
2 diversion housing includes a top plate and a bottom plate, the bottom plate having the in-flow  
3 channel and out-flow channel formed therein, the top plate and bottom plate being secured to  
4 one another.

1           3.       The chemical additive dispensing device of claim 2, wherein the top plate and  
2 the bottom plate are formed by injection molding.

4. The chemical additive dispensing device of claim 1, wherein the fluid diversion housing is formed from a plastic material.

5. The chemical additive dispensing device of claim 4, wherein the fluid diversion housing is formed by injection molding.

6. The chemical additive dispensing device of claim 1, wherein the container is removably coupled to the fluid diversion housing.

7. The chemical additive dispensing device of claim 1, wherein the chemical additive is a fertilizer.

8. The chemical additive dispensing device of claim 7, wherein the fertilizer is in the form of granular particles.

9. The chemical additive dispensing device of claim 1, further comprising a diverter knob having an open and a closed position, wherein in the closed position the diverter knob prevents fluid from flowing into the container and in the open position the diverter knob allows fluid to flow into the container.

10. An irrigation system to automatically add a chemical additive, comprising:  
at least one station having a valve to control the flow of fluid from an inlet pipe; an  
outlet pipe to dispense fluid dependent on the position of the valve;  
a chemical additive dispensing device comprising: a  
fluid diversion housing having an input port for receipt of a first section of the outlet  
pipe extending from the station of the irrigation system and an output port for receipt  
of a second section of the outlet pipe that provides fluid to the rest of the irrigation  
system, the input port and the outlet port being in fluid communication such that the  
first and second sections of the outlet pipe are in fluid communication with one  
another;

a container coupled to the fluid diversion housing, the container to store a chemical additive;

13                    an in-flow channel formed within the fluid diversion housing in fluid  
14                    communication with the input port and the container for diverting fluid from the input  
15                    port into the container; and

16                    an out-flow channel formed within the fluid diversion housing in fluid  
17                    communication with the output port and the container for diverting fluid from the  
18                    container into the output port;

19                    wherein, in operation, the container is filled with fluid from the in-flow  
20                    channel such that the fluid mixes with the chemical additive, and once the container is  
21                    filled with fluid, the mixture of fluid and chemical additive is diverted through out-  
22                    flow channel to the output port such that the fluid chemical additive mixture is  
23                    distributed to the rest of the irrigation system.

1                    11.     The irrigation system of claim 10, wherein the fluid diversion housing  
2                    includes a top plate and a bottom plate, the bottom plate having the in-flow channel and out-  
3                    flow channel formed therein, the top plate and bottom plate being secured to one another.

1                    12.     The irrigation system of claim 11, wherein the top plate and the bottom plate  
2                    are formed by injection molding.

1                    13.     The irrigation system of claim 10, wherein the fluid diversion housing is  
2                    formed from a plastic material.

1                    14.     The irrigation system of claim 13, wherein the fluid diversion housing is  
2                    formed by injection molding.

1                    15.     The irrigation system of claim 10, wherein the chemical additive is a fertilizer.

1                    16.     The irrigation system of claim 10, wherein the chemical additive dispensing  
2                    device further comprises a diverter knob having an open and a closed position, wherein in the  
3                    closed position the diverter knob prevents fluid from flowing into the container and in the  
4                    open position the diverter knob allows fluid to flow into the container.

1                    17.     A method for adding a chemical additive at a station of an irrigation system  
2                    comprising:

3           forming a fluid diversion housing having an input port for receipt of a first section of  
4 an outlet pipe extending from the station of the irrigation system and an output port for  
5 receipt of a second section of the outlet pipe that provides fluid to the rest of the irrigation  
6 system, the input port and the outlet port being in fluid communication such that the first and  
7 second sections of the outlet pipe are in fluid communication with one another;

8           coupling a container to the fluid diversion housing, the container to store a chemical  
9 additive;

10          forming an in-flow channel within the fluid diversion housing in fluid communication  
11 with the input port and the container for diverting fluid from the input port into the container;

12          forming an out-flow channel within the fluid diversion housing in fluid  
13 communication with the output port and the container for diverting fluid from the container  
14 into the output port; and

15          wherein, in operation, the container is filled with fluid from the in-flow channel such  
16 that the fluid mixes with the chemical additive, and once the container is filled with fluid, the  
17 mixture of fluid and chemical additive is diverted through the out-flow channel to the output  
18 port such that the fluid chemical additive mixture is distributed to the rest of the irrigation  
19 system.

1           18.     The method of claim 17, wherein the fluid diversion housing includes a top  
2 plate and a bottom plate, the bottom plate having the in-flow channel and out-flow channel  
3 formed therein, the top plate and bottom plate being secured to one another.

1           19.     The method of claim 18, wherein the top plate and the bottom plate are formed  
2 by injection molding.

1           20.     The method of claim 17, wherein the fluid diversion housing is formed from a  
2 plastic material.

1           21.     The method of claim 20, wherein the fluid diversion housing is formed by  
2 injection molding.

1           22.     The method of claim 17, wherein the chemical additive is a fertilizer.

- 1           23.     The method of claim 17, wherein the fluid diversion housing further includes a  
2     diverter knob having an open and a closed position, wherein in the closed position the  
3     diverter knob prevents fluid from flowing into the container and in the open position the  
4     diverter knob allows fluid to flow into the container.